



Palmer Starter FAQ

ROBERT L. PALMER COMPANY

Automation Equipment

Sales Engineers

2498 South Tejon Street

• Englewood, Colorado 80110-1059

• Phone: 303-922-5585

Fax: 303-922-7441

1) Circuit breaker is nuisance tripping (for C.B. combination starters only)

A) Adjust the dial on the face of the circuit breaker to between 9X – 13X of full load current; the breaker will trip instantaneously if the current exceeds this value. Normal in-rush currents for NEMA design B motors are between 6X – 9X FLA.

2) The motor is running backwards

A) Swap any two of the motor leads on the overload; this will reverse the rotation.

3) Overload relay is tripping during startup

A) Our starters are supplied standard with class 10 overload relays (some NEMA starters are adjustable class 10/20). Class 10 overloads generally allow for 6-10 seconds of motor in-rush. If the overload is tripping before the motor reaches full speed, the class 10 overload may be swapped with a class 20 overload – this will delay the trip point by several seconds for high inertia loads.

4) Overload relay is tripping during normal operation

A) The dial on the overload should be set for full load current – if necessary, this can be increased into the service factor of the motor. Verify the FLA & service factor on the nameplate of the motor. **DO NOT EXCEED THESE VALUES!!** (example: A 3 HP motor has nameplate FLA of 4.2A at 460V/3Ph, and a service factor of 1.15. Maximum overload setting: $4.2 \times 1.15 = 4.8$)

B) Each overload relay is monitoring all three phases, and will trip if a phase loss is detected (10% or more difference between phases). If this phase loss is relatively small (12-15%), this could take several minutes to trip.

5) Phase monitor is tripped (optional item)

A) Verify that the phase monitor is the correct unit – the red phase monitor is for 208-240V applications, the yellow phase monitor is for 460V applications.

B) Measure all three phases to verify voltage is present & at the correct level

C) Adjust the sensitivity dial counter-clockwise until the green (Normal) indicator illuminates.

D) The phase monitor could be sensing phase reversal; swap any two of the incoming power leads, & repeat step 3. Note that this will also reverse the motor direction (see item 2).

6) Motor will not start in 'Auto' mode (if HOA provided)

A) Check field wiring connections in accordance with the wiring diagram – on most starters, connect remote auto start (dry contact) to the yellow wire in the starter (usually this is contact number '13' on the contactor, used as a terminal) & connect the other wire from the remote dry contact to the coil – terminal 'A1'.

B) Verify lead length for auto start; longer than 200 feet can cause problems with the starter.

7) Motor will not start in 'Hand' mode (if HOA provided)

A) Manually push in the contactor to check for any blockage (melted coil, metal shavings, improperly installed auxiliary, etc). If any obstructions exist, a new coil or contactor may be required.

B) Check all internal wiring. Tighten any loose wiring connections, and replace any damaged wires.

C) Check fuses on control power transformer.

a) If primary fuses are blown, check control for short circuit or improper voltage.

b) If secondary fuse is blown, the transformer is over capacity. Dampers, timeclocks, & other low voltage devices not provided with the starter must be powered separately.